

CLAIMS:

1. A method for manufacturing a micro-electromechanical device (10), in which are consecutively deposited on a substrate (1) a first electroconductive layer (2) in which a first electrode (2A) is formed, a first electroinsulating layer (3) of a first material, a second electroinsulating layer (4) of a second material, different from the first material, and a second electroconductive layer (5) in which a second electrode (5A) lying opposite the first electrode is formed which together with the first electrode (2A) and the first insulating layer (3) forms the device (10), in which after the second conductive layer (5) has been deposited, the second insulating layer (4) is removed by means of an etching agent that is selective with respect to the material of the second conductive layer (5), characterized in that for the first material and the second material are selected materials that can be etched only limitedly selectively with respect to each other and for depositing the second insulating layer (4) on top of the first insulating layer (3) a further layer (6) is deposited of a further material that can be etched selectively with respect to the first material.
- 10 2. A method as claimed in claim 1, characterized in that the material of the further layer (6) is selected such that the second insulating layer (4) can be removed selectively with respect to the further layer (6).
- 15 3. A method as claimed in claim 1 or 2, characterized in that the second insulating layer (4) is first removed locally and preferably selectively with respect to the further layer (6) up to the further layer (6), then the further layer (6) is removed selectively with respect to the first insulating layer (3) after which the second insulating layer (4) is removed in its entirety.
- 20 4. A method as claimed in claim 3, characterized in that for the further material of the further layer (6) and for the material of the conducting layers (2,5) the same material is chosen and for removing the further layer (6) the second electroconductive layer (5) is covered with a masking layer (7) for the etching agent of the further layer (6).

5. A method as claimed in any one of the preceding claims, characterized in that silicon nitride is chosen for the first material and silicon oxide for the second material.

6. 5 A method as claimed in claim 5, characterized in that an aqueous solution of ammonium fluoride (NH₄F) and nitrogen fluoride (HF) is chosen as an etching agent for removing the second insulating layer (4).

7. 10 A method as claimed in one of the preceding claims, characterized in that the electroconductive layers (2, 5) and the further layer (6) are made of aluminum.

8. 15 A method as claimed in claim 7, characterized in that a mixture of phosphoric acid, acetic acid and sulphuric acid is chosen as an etching agent for the further layer (6).

9. 20 A method as claimed in any one of the preceding claims, characterized in that 15 both the first conductive layer (2) and the second conductive layer (5) are formed as two interrupted parts ((2A, 2B), (5A, 5B)), the interrupted parts (5A, 5B) of the second conductive layer (5) being formed on top of the interrupted parts (2B, 2A) of the first conductive layer (2).

20 10. 25 A method as claimed in any one of the preceding claims, characterized in that all layers (2, 3, 4, 5, 6, 11) are deposited by means of CVD or sputtering.

11. 30 A method for manufacturing an electronic device implementing a method as claimed in one of the preceding claims.

25 12. A micro-electromechanical device (10) obtained from implementing a method as claimed in any one of the claims 1 to 10.

13. 30 A micro-electromechanical device (10) as claimed in claim 12 and comprising a tunable capacitor.

14. 35 An electronic device comprising a micro-electromechanical device (10) as claimed in claim 12 or 13.